REMARKS

Rejections under 35 USC §103(a)

Claims 1-7 are rejected under 35 USC §103(a) as being unpatentable over Takemoto et al. (U.S. Patent No. 5,198,041).

Claim 1 has been amended for clarification to recite the step of "deforming a Fe-Mn-Si-based shape memory alloy containing Nb and C without substantial NbC precipitation by a deformation ratio of from 5% to 40% at room temperature." The amendment is supported in the original disclosure because it is inherent in the original recitation of claim 1 "subjecting the deformed alloy to **aging heating treatment to precipitate NbC carbides.**" If the Fe-Mn-Si-based shape memory alloy already had substantial NbC precipitation when it is deformed at room temperature, "aging heating treatment to precipitate NbC carbides" would not make sense.

The portion in Takemoto et al which was referred to by the Examiner reads as follows: "The steel melt was cast into an ingot, forged, hot rolled to a thickness of 3 mm, annealed, cold rolled to a thickness of 2 mm and annealed." Thus, according to Takemoto et al, the sample material is annealed after the hot rolling. If the material contained Nb and C, **the annealing would cause NbC to precipitate**. Therefore, in Takemoto et al, the material cold rolled is not "a Fe-Mn-Si-based shape memory alloy containing Nb and C **without substantial NbC precipitation.**"

Thus, Takemoto et al does not teach or suggest "deforming a Fe-Mn-Si-based shape memory alloy containing Nb and C without substantial NbC precipitation by a deformation ratio of from 5% to 40% at room temperature," as recited in amended claim 1.

Moreover, claim 1 further has been amended to recite "wherein the Fe-Mn-Si-based shape memory alloy with Nb, C addition comprises, as alloy components, Mn: 15% to 40% by weight, Si: 3% to 15% by weight, Nb: 0.1% to 1.5% by weight, C: 0.01% to 0.2% by weight, and Fe and inevitable impurities: residual amount, wherein the atomic ratio Nb/C between Nb and C is 1 or more," incorporating the recitation of cancelled claim 2. None of the examples disclosed in Takemoto et al satisfies the recited requirements as shown in the following table (difference shown in bold).

	C (wt %)	Nb	atomic ratio Nb/C
Claim 1	0.01-0.2	0.1-1.5	1 or more
A11	0.037	0.27	**0.94**
A13	0.039	0.24	**0.79**
A15	**0.009**	0.31	4.44
A16	0.040	0.27	**0.88**

Atomic ratio Nb/C is calculated by the following formula:

$$\text{Atomic ratio Nb/C} = \frac{Nb(wt\%)/93}{C(wt\%)/12}$$

For at least these reasons, claim 1 patentably distinguishes over Takemoto et al. Claims 2-7, depending from claim 1, also patentably distinguish over Takemoto et al for at least the same reasons.

In view of the aforementioned amendments and accompanying remarks, Applicants submit that the claims, as herein amended, are in condition for allowance. Applicants request such action at an early date.

If the Examiner believes that this application is not now in condition for allowance, the Examiner is requested to contact Applicants' undersigned attorney to arrange for an interview to expedite the disposition of this case.

If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,

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